



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION IX
 75 Hawthorne Street
 San Francisco, CA 94105

June 10, 2014

TO: Robin Richardson, Acting Director
 Office of Superfund Remediation and Technology Innovation (OSRTI)

THRU: *[Signature]* *Acting*
 John Lyons, Assistant Director
 California Site Cleanup Branch (SFD7)
 Superfund Division

THRU: Caleb Shaffer, Section Chief *[Signature]*
 California Site Cleanup Section 1 (SFD7-1)
 Superfund Division

FROM: Lynn Suer *[Signature]*
 Remedial Project Manager, SFD7-1

SUBJECT: EE/CA Approval Memorandum for Proposed Non-Time Critical Removal Action
 at AMCO Chemical Superfund Site

The purpose of this memorandum is to request approval to proceed with an Engineering Evaluation/Cost Analysis (EE/CA) for a non-time critical removal action for Non-aqueous Phase Liquid (NAPL) and dissolved VOCs at the AMCO Chemical Superfund Site (Site) located near the intersection of Mandela Parkway and 3rd Street in West Oakland, CA. EPA has determined that site characteristics warrant a removal action as part of the long-term remedial action at the site.

At this time, the Environmental Protection Agency (EPA) is planning to prepare the EE/CA report. EPA has determined there are no viable potential responsible parties (PRPs) to implement the removal work selected in the EE/CA. Therefore, the removal action would be funded with Superfund appropriations.

I. Site Background

The AMCO is located at 1414 3rd Street in a light industrial and residential area in the City of Oakland, one block south of the West Oakland Bay Area Rapid Transit (BART) station. The

EECA Approval Memorandum, AMCO Chemical Site

Facility is bordered on the north by a vacant lot owned by BART, on the west by residences, on the south by 3rd Street, and on the east by Nelson Mandela Parkway (formerly Cypress Street). The size of the Facility property is approximately 160 - 200 feet by 226 feet (about 0.9 acre). The Cypress (I-880) Freeway corridor crosses just to the south, passing over 3rd Street near the southeast corner of the property. The current land use at the Facility is light industrial and residential. The nearest residences are immediately adjacent to the Facility along 3rd and Center Streets (Figure 1).

The Site is located in an area of West Oakland disproportionately burdened by multiple sources of pollution and ranks in the top 10 percent of the most impacted communities in California, according to an environmental hazard assessment tool developed by the California Environmental Protection Agency ("CalEPA") and the Office of Environmental Health Hazard Assessment ("OEHHA"). This tool, known as the California Communities Environmental Health Screening Tool, shows which portions of the state have higher pollution burdens and vulnerabilities than other areas and are, therefore, most in need of assistance.

The AMCO property was used as a chemical repackaging and distribution facility from the 1960s until 1989. Bulk chemicals were off-loaded from a railroad spur on-Site and stored in drums and storage tanks before being transferred to smaller containers for resale. Various sampling efforts have documented elevated concentrations of multiple contaminants of concern ("COCs") including heavy metals, volatile and semi-volatile organic compounds, petroleum hydrocarbons, organochlorine pesticides, dioxins/furans, and PCBs. All of these COCs, except lead and arsenic, have been tied to former AMCO operations.

Local and State Activities at the Site

Local, State, and federal involvement at the Site began in 1983 when AMCO initiated contact with EPA to assert that it was not a Treatment, Storage, or Disposal Facility. In 1985, the Alameda Fire Marshall requested assistance from the predecessor to the Department of Toxic Substances Control ("DTSC"), indicating that "serious conditions" existed at the Site for a significant period of time and were growing worse. Alameda County Health Care Services Agency performed a Hazardous Waste Generator inspection in 1986, noting two underground storage tanks that lacked leak detection systems.

Beginning in 1988, State and local activities at the Site increased. That year, acting on a complaint from an employee of a drum disposal company, DTSC conducted several inspections of and interviews at the AMCO facility that revealed that various solvents and other chemical mixtures were improperly stored on the property. It is suspected that groundwater and soil contamination occurred as a result of improper storage and handling of chemicals, though other sources have yet to be determined. In 1989, the Cypress Partnership purchased the property and became involved in discussions with State and local authorities. In 1995, the degree of the contamination was revealed when workers excavating trenches for the California Department of Transportation were overwhelmed by vinyl chloride gas in a trench adjacent to the Site.

EPA Activities at the Site

Following the vinyl chloride discovery, EPA conducted an emergency removal in 1996 and 1997, which resulted in the construction and operation of a dual phase groundwater and vapor extraction system with a thermal oxidation treatment unit. The system operated for over a year to address VOCs in the source area, then was shut down in 1998 due to community concerns about emissions from the exhaust stack. Subsequently, the EPA conducted a Preliminary Assessment and Site Investigation ("PA/SI") to evaluate all actual and potential sources of contamination. The PA/SI sampled groundwater, soil, soil gas and crawl space air from nearby residences. The Site was proposed for listing on the National Priority List ("NPL") on April 30th, 2003. The Site was officially added to the NPL on September 29, 2003.

A Remedial Investigation (RI) was conducted during 2002- 2008. Key findings of the RI are:

- Several feet of LNAPL were observed floating on groundwater beneath the central area of the former AMCO facility. The LNAPL consists primarily of VOCs, including tetrachloroethene (PCE) and trichloroethene (TCE), but also contains SVOCs, pesticides, and dioxins/furans. The LNAPL is serving as the primary continuing source of contamination to groundwater, soil, and soil gas.
- The highest concentrations of contaminants (primarily VOCs) in groundwater and soil gas were generally observed in the central and south-central areas of the former AMCO facility, corresponding with the known locations of former chemical storage units and buried distribution piping.
- Groundwater contaminant concentrations beneath the central and south-central portions of the former facility decrease rapidly with depth. The concentrations in the deepest monitoring wells at the site are low or below detection levels, indicating that dense non-aqueous-phase liquid (DNAPL) has not migrated below approximately 20 to 30 feet bgs at the site (Figure 2).
- The VOCs identified as key contaminants (chlorinated solvents and petroleum hydrocarbons) are undergoing significant biodegradation in groundwater. However, data suggests that the down gradient edge of the VOC plume is expanding despite the naturally occurring biodegradation.
- 1,4-Dioxane, a highly mobile and recalcitrant contaminant, has widely migrated in groundwater from the site, and it is expected to continue migrating. Other contaminants mobilized in groundwater are soluble arsenic, iron, and manganese. Other metals, organochlorine pesticides, PCBs, and dioxins/furans generally have limited mobility in the environment, and the extents of these compounds are limited to the immediate vicinities of their historic suspected source areas.
- Several contaminants in groundwater currently exceed risk criteria for the ingestion pathway; however, groundwater is not currently used nor is it likely to be used in the future as a source of drinking water.
- The distributions of contaminants in soil are less centralized and more widespread than in groundwater, suggesting multiple industrial, non-industrial, and non-point sources. Many contaminants in soil, particularly lead, exceed risk criteria for industrial and residential receptors.

- Elevated lead concentrations were detected at several residential properties adjacent to or near the former AMCO facility. The concentrations of lead detected in the soil posed an immediate risk to residents, particularly children. A soil removal action to address the lead contamination was performed at all residential parcels occupying the same block as the former AMCO facility.
- Several VOCs were detected above screening levels, but within the acceptable risk range in residential soil gas, crawlspace air, and ambient air. No VOC detections exceeded acute reference concentrations, indicating that there is no immediate health threat to residents. The primary source of the VOCs in residential soil gas and air is groundwater, not soil.

During 2009, EPA conducted additional soil gas, residential crawl space, indoor and ambient air sampling at residences bordering the Site along Center and Third Streets. Based on the VOC concentrations in crawl spaces, EPA identified vapor intrusion as a potential human health risk for residents at four residences adjacent to the former AMCO facility on the west and southwest (Figure 3)

The EPA removal program installed active vapor mitigation systems at three properties on Third Street and one property on Center Street, as a precautionary measure to prevent vapor migration into residences. Follow-up air monitoring in 2010 and 2012 verified the effectiveness of these systems. The results of these three rounds of air sampling are summarized in a Draft Addendum to the Remedial Investigation, released in February 2014.

In 2010, Region 9 consulted with the National Remedy Review Board (2010) regarding remedial alternatives for addressing all contaminated media. The Board recommended additional characterization of soils to refine cost estimates for excavating/disposal and/or in situ treatment of soils. The results of this additional soil work are shown in Figure 4. The contaminated soils are concentrated between 3 – 15 feet below ground surface.

II. Threat to Public Health, Welfare, or the Environment

The Final Remedial Investigation Report and Draft Remedial Investigation Addendum document crawlspace, indoor and ambient air concentrations that could pose a threat of vapor intrusion. This threat is currently mitigated with vapor mitigation systems in the crawl spaces of four nearby residences (Figure 2 summarizes data for the nearby residences). However, the potential threat continues because the mitigation systems could fail, or homeowners/renters could disturb soils beneath the residences potentially removing soil barriers to vapor intrusion. Though the vapors are emanating from groundwater, the source area NAPL is a continuing source of contamination to groundwater.

Recently, a developer expressed interest in purchasing the home immediately adjacent to the AMCO property with plans of upgrading the foundation. EPA does not have Land Use Restrictions (LUCs) on the affected residences that could require mitigation measures when soils are disturbed. Moreover, the Department of Toxic Substances Control, the enforcement agency for LUCs in California, is reluctant to place land use restrictions on private residences and

homeowners cannot be compelled to record LUCs on their property. Consequently, it is not possible to ensure that a release of vapors could not occur either now or in the future. Moreover, an unanticipated release could go undetected for a period of time that exceeds the acute exposure durations for TCE (i.e., the first trimester of pregnancy).

Although removal of VOCs in the source area could be addressed with a Record of Decision, it is most expediently addressed with a Non-Time-Critical Removal Action. Under the best case scenario, the timeframe for developing a Record of Decision for this Site would be about 2 years. However, the timeframe could be longer if cost share issues with the California Department of Substances Control are not quickly resolved and/or community issues related to cleanup levels (residential vs. commercial) remain controversial. Since the VOCs in the source area will be a component of any remedy selection, the West Oakland community would be best served by addressing the source area in parallel with developing the Final ROD.

III. Statutory Basis for Action

The information presented in this memorandum indicates that actual or threatened releases of hazardous substances from the AMCO Chemical Site may present an imminent and substantial endangerment to public health and the environment. Through this proposed cleanup action, EPA will minimize and further reduce potential harm to public health and the environment.

IV. Factors for Determining Appropriateness of a Removal Action

Section 300.415(b)(2) of the National Contingency Plan (NCP) provides factors for determining the appropriateness of a removal action. A factor that is applicable to the AMCO Site is high levels of hazardous substances (i.e. NAPL) in soils largely at or near the ground surface that may migrate (**Figure 4**). These contaminated soils directly contribute to elevated groundwater concentrations beneath nearby residences (**Figure 2**). Vapors emanating from the contaminated groundwater pose a threat of human exposure to contaminated indoor air via intrusion into overlying residences (**Figure 3**).

In accordance with 300.415(b)(4) of the NCP, EPA has determined that a planning period of at least six months exists before on-site activities could be initiated; therefore, an EE/CA must be conducted for a non-time critical removal action.

V. Enforcement/Proposed Actions/Cost Estimates

In consultation with Headquarters and with input from stakeholders, EPA will prepare the EE/CA and EPA will issue an Action Memorandum memorializing the selection of a removal response action. In accordance with Agency policy, EPA will endeavor to address this Site as a fund-lead response action.

EPA will evaluate several removal response alternatives in the EE/CA including excavation, in-situ treatment, and thermal extraction. Currently, EPA estimates that the cost of these various removal responses could range from four to ten million dollars. Detailed cost estimates will be presented and documented in the EE/CA.

VI. Public Involvement

An EPA Community Involvement Coordinator (CIC) has been assigned to the Site. The CIC, in coordination with the Site RPM, will conduct community interviews. Pursuant to 40 CFR 300.415(m), a Community Involvement Plan (CIP) has been issued and will be updated prior to finalization of the EE/CA. EPA will establish an information repository for the EE/CA and use the EPA Region 9 website to facilitate the transfer of Site information to the public.

VII. Approval/Disapproval

The conditions at the AMCO Chemical Site meet the NCP criteria for a removal action. Therefore, I am requesting approval to proceed with an EE/CA. Your approval or disapproval should be indicated below.

Consultation
Approve: Robin R. Liu Date: 7/22/14

Disapprove: _____ Date: _____

Attachments: Figure 1 (includes Figures 1-1 through 1-3)
Figure 2 (includes Figures 5-22 through 5-25)
Figure 3 (includes Figures 3-3 through 3-6)
Figure 4 (includes Figures 6-5 through 6-17)